Last DSM Input Bit List

11th January 2005

Input Channel	Bit Description
0	CTB Multiplicity Bits 0:15 – Multiplicity
1	VTX Information Bit 0 – BBC TAC difference in window Bit 1 – ZDC TAC difference in window Bit 2 – BBC East small-tile ADC sum over threshold Bit 3 – BBC West small-tile ADC sum over threshold Bit 4 – BBC East large-tile ADC sum over threshold Bit 5 – BBC West large-tile ADC sum over threshold Bit 6 – ZDC East ADC sum over threshold 0 Bit 7 – ZDC West ADC sum over threshold 0 Bit 8 – ZDC East TAC in window Bit 9 – ZDC West TAC in window Bit 10 – ZDC East+West attenuated sum over threshold Bit 11:13 – Unused Bit 14 – ZDC East ADC sum over threshold 1 Bit 15 – ZDC West ADC sum over threshold 1
2	Other CTB Information Bits 0:13 – Unused Bit 14 – Topology flag (i.e. no hits on the top or bottom of the CTB and a few hits representing 2-prong events). The topology flag can be vetoed by the presence of either out-of-time hits or an overflow. The veto configuration is set up using a register in the CB201 DSM. Bit 15 – LED flag
3	EMC Information Bits 0:1 – Barrel jet patch bits encoding which of 3 thresholds is passed Bits 2:3 – Barrel high-tower bits encoding which of 3 thresholds is passed Bit 4 – Back-to-Back topology flag, i.e. 2 jet patches separated by 180 degrees have high towers over a threshold. Includes East and West half of the Barrel but not the Endcap Bit 5 – J/Ψ topology flag. A “looser” version of the back-to-back flag that includes jet patches separated by 120 degrees. Bit 6 – Jet patch topology flag (i.e. a pair of adjacent jet patches have energies over a threshold, either barrel or endcap). Bits 7:8 – Endcap jet patch bits encoding which of 3 thresholds is passed Bits 9:10 – Endcap high-tower bits encoding which of 3 thresholds is passed Bits 11:15 – Unused
4	Miscellaneous Information from Scaler Source Patch Panel Bit 0 – Blue bunch filled Bit 1 – Yellow bunch filled Bits 2:15 - Unknown
5	FPD SUM ALGORITHMS Bit 0 – At least 1 of 4 FPD East ADC sums over threshold 0

	Bit 1 – At least 1 of 4 FPD West ADC sums over threshold 0 Bit 2 –. At least 1 of 4 FPD East ADC sums over threshold 1 Bit 3 – At least 1 of 4 FPD West ADC sums over threshold 1 Bit 4 – At least 1 of 4 FPD East ADC sums over threshold 2 Bit 5 – At least 1 of 4 FPD West ADC sums over threshold 2 Bits 6:15 – Unused HIGH-TOWER ALGORITHMS Bit 0 - At least 1 FPD-East PMT produced a signal over a threshold. A register in the FP201 DSM is used to select which 1 of 3 available threshold comparisons is used to make this bit. Bit 1 – Same as Bit 0, but for FPD-West Bits 2:15 - Unused
6	Special Trigger Requests Bits 0:2 – selected special trigger request (zero if no request) Bits 3:6 – detector number (0:15) of detector making request Bits 7:13 – Unused Bit 14 – Zero-bias bit Bit 15 – Random bit
7	Unused